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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/611,730

07/01/2003

JianHong Zeng

DEE-PT116

7378

3624

7590

07/13/2004

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EXAMINER

TRAN, THUY V

ART UNIT

PAPER NUMBER

2821

DATE MAILED: 07/13/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/611,730	ZENG ET AL.	
	Examiner	Art Unit	
	Thuy V. Tran	2821	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 01 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 6 and 8-12 is/are rejected.
- 7) ☒ Claim(s) 4, 5 and 7 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 01 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This is a response to the Applicants' filing on July 1st, 2003. In virtue of this filing, claims 1-12 are currently presented in the instant application.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Inventorship

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Drawings Objections

3. The drawings are objected to because Figs. 1-5 are not labeled correctly.

4. Figures 1-5 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawing sheets are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Abstract Objection

5. The abstract of the disclosure is objected to because it contains form and legal phraseology therein (such as "said" in lines 4-9 and 11-14). Correction is required. See MPEP § 608.01(b).
6. Applicant is reminded of the proper language and format for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

Claim Objections

7. Claim 10 is objected to because of the following informalities:

Claim 10, line 2, "the" should be changed to --a--, and "consisted" should be changed to --consisting--.

Appropriate correction is required.

8. Applicant is advised that should claims 6 and 8 be found allowable, claims 6 and 8 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-3, 6, and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hester (U.S. Patent No. 3,973,165) in view of Bessho et al. (U.S. Patent No. 5,977,530).

With respect to claim 1, Hester discloses, in Fig. 1, a magnetron high frequency device comprising (1) a filtering inductor [47] coupled to a positive end of a direct current power supply and having a first end and a second end, (2) a central tap transformer [1] having a central tap end [3], a first end, and a second end; the central tap end is connected to the second end of the filtering inductor [47], (3) a filtering capacitor [49] having a first end connected to the first end of the central tap transformer and a second end connected to a negative end of the direct current power supply, (4) a first switch [25] which is connected in series to the second end of the central tap transformer [1] and connected to the negative end of the direct current power supply, (5) a first capacitor [27] connected to the central tap transformer [1], (6) a rectifying device [21] coupled to a secondary winding [11] of the central tap transformer [1], (7) a magnetron [13] coupled to the rectifying device, and (8) a second switch [23] coupled to the central tap transformer [1], wherein the first capacitor and the central tap transformer [1] form a resonant circuit. Hester does not teach a second capacitor which is in series with the second switch and with which the first capacitor and the central tap transformer form the resonant circuit.

Bessho et al. discloses, in Fig. 1, an electric power converter for driving a magnetron comprising a capacitor [5] connected in series with a second switch [13] so as to form a resonant circuit with a first capacitor [4] and a primary winding of transformer [2].

It would have been obvious to one of ordinary skills in the art at the time of the invention to implement the device of Hester by additionally configuring a second capacitor in series with the second switch so as to form a resonant circuit with the first capacitor and the central tap transformer by that the voltage applied to the first switching device can be clamped, and the off-time of the first switching device can be freely adjusted since such an arrangement of the second capacitor in series with the second switch for the stated purpose has been well known in the art as evidenced by the teachings of Bessho et al. (see Abstract, lines 12-15).

With respect to claim 2, Fig. 1 of Hester shows that the first capacitor [27] is connected in parallel with the central tap transformer [1].

With respect to claim 3, Fig. 1 of Hester shows that the first capacitor [27] is connected in parallel with the first end (upper half of left winding of [1]; see Fig. 1) and the second end (lower half of left winding of [1]; see Fig. 1) of the central tap transformer [1].

With respect to claims 6 and 8, the combination of Hester and Bessho et al. disclose that the in-series circuit (which includes the second capacitor and the second switch) is connected in series with the central tap transformer [1].

With respect to claim 9, the combination of Hester and Bessho et al. disclose that the in-series circuit (which includes the second capacitor and the second switch) is connected in series with the second end of the central tap transformer [1].

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With respect to claim 10, Fig. 1 of Hester shows that the rectifying device is selected from a group including of a full wave rectification.

With respect to claim 11, Hester discloses that the transformer [1] is a transformer with leakage inductance (see col. 6, line 35).

With respect to claim 12, Fig. 1 of Hester shows that the first capacitor [27] is a body capacitance of the first switch [25].

Allowable Subject Matter

11. Claims 4-5 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Prior art fails to disclose or fairly suggest:

- A magnetron high frequency device wherein the first capacitor is connected in series with the central tap transformer and is connected in parallel with the first switch, in combination with the remaining claimed limitations as called for in claim 4 (claim 5 is allowable since it is dependent on claim 4); and
- A magnetron high frequency device wherein the in-series circuit is connected in parallel with the first end and the second end of the central tap transformer, in combination with the remaining claimed limitations as called for in claim 7.

Citation of relevant prior art

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Prior art Bessyo et al. (U.S. Patent No. 6,362,463) discloses a high frequency heating apparatus.

Prior art Shoda et al. (U.S. Patent No. 5,115,168) discloses a power supply for microwave discharge light source.

Prior art Sakamoto et al. (U.S. Patent No. 4,812,960) discloses a power feeding apparatus.

Inquiry

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thuy V. Tran whose telephone number is (571) 272-1828. The examiner can normally be reached on M-F (8:00 AM -5:00 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Thuy V. Tran
Examiner
Art Unit 2821

07/10/2004

